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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,350	11/26/2003	Yasuo Miyake	65933-060	6163

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McDERMOTT, WILL & EMERY  
600 13th Street, N.W.  
Washington, DC 20005-3096

EXAMINER
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MARTIN, ANGELA J

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 03/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/721,350

Applicant(s)

MIYAKE ET AL.

Examiner

Angela J. Martin

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,2,11,12,14,15 and 17-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,11,12,14,15 and 17-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This Office Action is responsive to the Amendment filed on January 6, 2006. The Applicant has amended claims 1, 2, 11, 12, 17, 18; canceled claims 3-10, 14, 15, 20; added new claims 21, 22. However, Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, this action is made final.

#### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 11, 12, 14, 15, 17-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cortright et al., U.S. Pat. Application Pub. 2003/0220531 A1, in view of Fleisher, U.S. Pat. No. 5,580,681, and in further view of Fleisher et al., U.S. Pat. Application Pub. 2002/0122980 A1.

Rejection of claims 1, 2, 11, 12, 14, 15, 17, 18 drawn to an electrode; claims 19-22 drawn to a fuel cell.

Cortright et al., teach an electrode for a fuel cell comprising a catalyst including a proton-conducting substance (sect. 0031). It teaches a catalyst, a carrier supporting the catalyst, a catalyst comprising an ion-exchange resin, and a conductive porous substrate supporting the catalyst, wherein the catalyst includes a proton-conducting substance (sect. 0018). It teaches the proton-conducting substance is an acid, which is

Art Unit: 1745

solid, and is a heteropolyacid (sect. 0045). It teaches the heteropolyacid is phosphotungstic acid (sect. 0045). It teaches the proton-conducting substance is a fullerene derivative (sect. 0018; 0077). It teaches a fuel cell (sect. 0004; 0028; 0031) comprising the above-described electrode. It teaches a fuel cell comprising an electrode for a fuel cell in a fuel-feeding side, an electrode for a fuel cell in an oxygen-feeding side; and a solid electrolyte membrane between the electrodes, wherein at least one of the electrodes is the electrode for the above claimed fuel cell (sect. 0031)

Fleisher teaches an electrode comprising a catalyst layer (col. 17, lines 35-40) including an ion-exchange resin and a proton-conducting substance (col. 8, lines 54-63; col. 22, lines 45-50), wherein the proton-conducting substance is a solid acid having a water of crystallization (col. 16, lines 45-47). It teaches the solid acid is a heteropolyacid (col. 22, lines 45-50). It teaches solid state proton conductors in fuel cells (col. 11, lines 41-46).

Fleisher et al., teach the heteropolyacid is phosphomolybdic acid, silicomolybdic acid, phosphotungstic acid, silicotungstic acid (sect. 0100). It teaches a water of crystallization of the solid acid (sect. 0155). It teaches the use of heteropolyacids in fuel cells (sect. 0103).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to insert the teachings of Fleisher and Fleisher et al., into the teachings of Cortright et al., because Fleisher and Fleisher et al., give examples of the types of heteropolyacids used in the fuel cell and teach that the heteropolyacids have a water of crystallization which helps prevent water loss.

***Response to Arguments***

3. Applicant's arguments with respect to above claims have been considered but are moot in view of the new ground(s) of rejection. By amending the independent claims with "water of crystallization", a new rejection had to be presented since previous claims did not depend on this limitation.

***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nokuma et al., WO 01/13295, teach a proton-conductive electrode for fuel cells comprising a fullerene derivative. Yonezu et al, JP 2002-015746, teach a fuel cell electrode comprising a catalyst and a proton conducting body.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 1745

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela J. Martin whose telephone number is 571-272-1288. The examiner can normally be reached on Monday-Friday from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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PATRICK JOSEPH RYAN  
SUPERVISOR